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(54) Title: MEMBRANE ELECTRODE UNIT

(57) Abstract: The invention relates to membrane electrode units (MEUs) for membrane fuel cells. The products contain different gas diffusion layers on the anode side and on the cathode side. The amount of the water repellant agent (WRA) in the anode gas diffusion layer is identical or higher than the amount of water repellant agent in the cathode gas diffusion layer and is in the range of 20 to 35% by weight (based on total weight of the gas diffusion layer). At the same time, the total pore volume V of the cathode gas diffusion layer is higher than the total pore volume of the anode gas diffusion layer ($V_{\text{Cathode}} > V_{\text{Anode}}$). The membrane electrode units as well as the PEM stacks made therewith show improved performance when operated with unhumidified operating gases (such as dry hydrogen, reformat gas, oxygen or air).



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